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ABSTRACT

United Nations agencies and other intergovernmental and nongovernmental organizations concerned with environmental education (EE) met for the third time by invitation of UNESCO in order to develop cooperation and coordination in EE and training among the agencies. This report of the meeting is presented in three sections. The first section reports the proceedings of the conference. The second section gives the history of the UNESCO-UNEP International Environmental Education Program (IEEP) from 1975-1990. The section includes a description of IEEP's general framework, actions taken by IEEP from 1975-1990, and future actions planned. Priority areas reflected in the future plans include teacher education, development of curricula and teaching materials, research and experimentation to develop awareness among educational planners and decision-makers, EE information. The third section presents summaries of presentations of 10 participating organizations: (1) United Nations Environment Programme; (2) Food and Agricultural Organization; (3) International Labour Office; (4) United Nations Industrial Development Organization; (5) World Health Organization; (6) World Meteorological Organization; (7) World Bank; (United nations Development Programme; (8) Commission of the European Communities; (9) International Council of Scientific Unions; and (10) International Union for the Conservation of Nature and Natural Resources. Appendices contain a copy of the agenda, the welcoming address from Colin N. Power, Assistant Director-General of UNESCO's Education Sector, and a list of participants. (MDH)

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Third Interagency Consultation Meeting on Co-operation and Co-ordination in Environmental Education

organized by

UNESCO

in the framework of

UNESCO-UNEP International Environmental Education Programme (IEEP)

FINAL REPORT

Division of Education
for the Quality of Life

Paris, France
6-8 November 1990

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Introduction

The first Interagency Consultation Meeting on Environmental Education was held in Paris, France, at UNESCO Headquarters, 3-4 October 1974. This meeting was in direct response to Recommendation 96 of the United Nations Conference on the Human Environment, Stockholm, Sweden, 1972, which stated that "the [UN] Secretary-General, the organizations of the United Nations system, especially UNESCO, and the other international agencies concerned should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education..."

The second Interagency Consultation Meeting was also held by UNESCO in Paris, 28-29 April 1977, to discuss further cooperation and coordination in environmental education (EE), particularly in the framework of the Unesco-UNEP International Environmental Education Programme (IEEP), which was launched in 1975 after the first Interagency Consultation Meeting. Another major consideration was preparation for the Unesco-UNEP Intergovernmental Conference on Environmental Education, held in Tbilisi (USSR), 14-26 October 1977.

The third Interagency Consultation Meeting on Cooperation and Coordination in Environmental Education was held under similar circumstances, 6-8 November 1990, in Paris , France, and considered inter alia preparations for the United Nations Conference on Environment and Development, to be held in Brazil in 1992, at which the progress made in EE since the Stockholm Conference will be discussed and Agenda-21 established for the future, extending into the 21st century.

Proceedings

The third consultation meeting among UN agencies and other intergovernmental and nongovernmental organizations concerned with environmental education was convened by UNESCO in the framework of the UNESCO-UNEP International Environmental Education Programme, Paris, 6-8 November 1990. As before, a major objective was cooperation and coordination in environmental education and training among the agencies and other world bodies participating.

The consultation meeting was among the first steps taken toward preparation of the United Nations Conference on Environment and Development, to be held in Brazil, 1992 -- twenty years after the historic UN Conference on the Human Environment, Stockholm, 1972. The UNESCO-UNEP International Environmental Education Programme) itself was launched in 1975 in response to Recommendation 96 of the Stockholm Conference, following the first Interagency Consultation Meeting (1974).

The UN agencies and other organizations which took part, through their representatives, in the third Interagency Consultation Meeting were: the Food and Agriculture Organization (FAO), the International Labour Office (ILO), the UN Industrial and Development Organization (UNIDO), the World Health Organization (WHO), the World Meteorological Organization (WMO), the World Bank, the International Council of Scientific Unions (ICSU), the International Union for the Conservation of Nature and Natural Resources (IUCN), as well as Unesco, UNEP and a member of the Secretariat of the UN Conference on Environment and Development (UNCED). The UN Development Programme (UNDP) and the Commission of European Communities (CEC) sent reports on their respective organizations' environmental education and information activities.

The substantive agenda included : (1) presentation and discussion of environmental education and information programmes of participating agencies and organizations; (2) UN cooperation and coordination in environmental education and training; and (3) suggestions concerning EE inputs into the UN Conference on Environment and Development, Brazil, 1992. (See Annex I)

The consultation meeting was opened, 6 November 1990, by UNESCO's Coordinator for the Environment (representing the Director-General), who emphasized two challenges confronting the participants. One was the need to respond to the call from governments to accord high priority to environmental education, training and information in general and particularly during the preparatory process of the UN Conference on Environment and Development. The other challenge was the need to make the information emerging from scientific environmental research more "digestible" and more widely distributed, especially to policy- and decision-makers, than has been the case. The welcoming address on behalf of UNESCO's Director-General was delivered by

the Assistant Director-General of the Education Sector, who stressed the imperative need of EE in the face of an increasingly menaced world environment, and Unesco's response. (See Annex II)

Before presenting UNEP's environmental education and training activities, its representative indicated four challenges for the next stage of the UNESCO-UNEP International Environmental Education Programme : (1) how participating organizations could help to achieve the goal of environmental literacy for all; (2) extension of the Unesco-UNEP IEEP partnership to others; (3) designing of new, innovative approaches for environmental information; and (4) educating people towards individual and collective environmental action. As for UNEP's EET activities, see Part III.(Presentations, pp.11-14)

There was also a special presentation of UNEP's information programme, involving publications, information kits, media services (releases, features, fact sheets, press conferences, seminar/workshops, etc.), audio-visual services (videos, films, radio programmes) and inter-agency relations.

Details on the plans and activities of the Unesco-UNEP International EE Programme followed. (See Part II, pp 5 - 10) Unesco's environmental sciences programmes were then presented as seeking (1) to heighten public environmental awareness and concern; (2) to reinforce the role of science in environmental management; and (3) to promote diversification of scientific environmental information and its communication to different audiences. The last includes (a) technical specialists; (b) decision-makers (for whom special information efforts are planned); and (c) non-specialist audiences, such as teachers, environmental organizations, etc. A primary thrust is promotion of scientific research and communication of its results. Particularly mentioned were the Man and the Biosphere (MAB) Programme and its 36-poster exhibit, "Ecology in Action"(1981); the International Hydrological Programme (IHP); the International Geological Correlation Programme; and the Intergovernmental Oceanographic Commission. A current priority is establishment of an international Code of Environmental Ethics for Engineers.

These reports initiated a series of informative presentations by participants at the consultation meeting concerning their own organizations' environmental education, training and information plans. The exchange of information and experiences -- plus the ensuing discussions of each presentation -- illuminated this particularly important part of the meeting. (See Part III. Presentations)

As for the second substantive item on the meeting's agenda -- cooperation and coordination at the international level, particularly, but not exclusively, within the UN family -- the consultation meeting itself, a participant was quick to point out, demonstrated the need for a periodical -- annual or biennial -- get-together for an updated exchange of information and experiences. Moreover a clearing-house was suggested for receipt of all relevant materials and information of participating organizations. For this the practical solution was found in the

consensus of the meeting that the IEEP newsletter Connect be used as the clearing-house for reports of and notices on the participating organizations' activities and materials. In addition to eliminating -- or at least minimizing -- duplication of such materials, prior coordination and cooperation in their preparation and production were deemed advisable. Here the UNESCO-UNEP International Environmental Education Programme was considered a possible focal point and coordinating mechanism. Further suggestions and recommendations involved an effective division of efforts so as to cover all audiences and regions; bilateral or trilateral partnerships similar to that of Unesco and UNEP as well as reinforced links with the IEEP; continual monitoring and evaluation of these activities, possibly on an institutional basis, so as to periodically improve, modify or update their priorities and implementation. Above all was the general feeling that another consultation meeting of a similar nature be held within the next year, assuredly before the UN Conference of 1992.

As for the UN Conference on Environment and Development (UNCED), the representative member of the UNCED Secretariat summarized the current state of its preparations and solicited suggestions concerning EE inputs, noting that the presentations and discussions of the consultation meeting had already provided him with a number. In calling for the conference, the UN General Assembly had stressed the need to find integrated strategies that would prevent further degradation of the environment and promote sustainable, environmentally-sound development in every part of the world. In this connection, the UN General Assembly had decided that one of the conference's objectives should be "to promote environmental education, especially of the younger generation, as well as other measures to increase awareness of the value of the environment." An EE Working Party has consequently been set up by the Secretariat and is currently preparing reports and other papers, as directed by the Preparatory Committee,"in coordination and consultation with UNESCO and other relevant organizations" -- such as those partaking in the consultation meeting -- "in order to develop proposals on environmental education and public awareness for consideration by the Preparatory Committee." Close cooperation was promised by participants, who also requested to be kept fully informed of the progress made.

Each agency and organization participating in the Paris consultation meeting, when discussing cooperation in the field of environmental education and training, stressed cooperation with UNESCO, as the UN agency whose mandate inter alia is education, in the framework of the UNESCO-UNEP International Environmental Education Programme.

In this connection, there was also a consensus among participants that their environmental education activities be cooperatively conducted on the basis of the goals, objectives, characteristics and principles established by the Intergovernmental Environmental Education Conference held in Tbilisi (USSR), October 1977 (see Connect, January 1978).

Similarly, it was agreed that future EE activities should be based on the International Strategy for Action in the Field of Environmental Education and Training for the 1990s, which was unanimously adopted by the International Congress on Environmental Education and Training, held in Moscow (USSR), August 1987, in the framework of the UNESCO-UNEP IEEP. (See Connect, June and September 1987).

The primary objective, participants concluded, was to link the environmental education, training and information efforts of their agencies and organizations so as to promote and contribute, powerfully and effectively, to environmentally sound, sustainable development and a higher quality of life. In a word, there was a consensus to the effect that the universal goal is environmental literacy for all, and more particularly, in-depth environmental know-how for decision-makers. In reaching these conclusions, the consultation meeting made a major step toward preparation of a substantive and successful UN Conference on Environment and Development, planned for 1992 in Brazil.

The third Interagency Consultation Meeting on Cooperation and Coordination in Environmental Education was closed, 8 November 1990, by UNESCO's Assistant Director-General for Education.

UNESCO-UNEP International Environmental Education Programme (IEEP) 1975-1990

With deepening concern about the deterioration of the world environment, and with awareness of the key role of environmental education in this regard, the United Nations Conference on the Human Environment, held in Stockholm, Sweden, 1972, stated in Recommendation 96 that:

> the [UN] Secretary-General, the organizations of the United Nations system, especially Unesco, and the other international agencies concerned should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education, interdisciplinary in approach, in-school and out-of-school, encompassing all levels of education and directed towards the general public, in particular the ordinary citizen living in rural and urban areas, youth and adults alike, with a view to educate him as to the simple steps he might take, within his means, to manage and control his environment.

In response, Unesco and the United Nations Environemnt Programme (UNEP) jointly launched the UNESCO-UNEP International Environmental Education Programme in 1975. The objectives were -- and are -- to assist governments and national, regional and international institutions to incorporate environmental education (EE) into formal and nonformal education systems and programmes, in order to promote (a) awareness of, and concern about, the interdependence of the economic, social and ecological aspects of the environment; (b) acquisition by all individuals of the knowledge, values, attitudes, commitment and skills needed to protect and improve their environments; and (c) development of new patterns of behaviour and ethical responsibilities of individuals, personally , in groups or as society as a whole towards preservation or amelioration of their environments. Succinctly, the goal is environmental literacy for all.

IEEP's general framework for environmental education development has been (a) formal education (primary and secondary education, teacher education, technical and vocational education and higher education); and (b) nonformal education. Each area has received appropriate attention in accordance with the achievements and findings of earlier undertakings as well as the needs and priorities expressed by Member States. In this context, actions have been taken for the incorporation of environmental education into educational policies and plans, curricula, instructional materials and methodologies of all types and at all levels of formal and nonformal education - with emphasis on interdisciplinarity and the problem-solving approach.

The mechanism of delivery for IEEP has consisted of exchange of information and experience, research and experimentation, curriculum and materials development and adaptation, training of key educational personnel, teachers and others, and international cooperation. In the promotion and development of environmental education, Unesco has cooperated with Ministries of Education and

Environment, universities and national institutions, and relevant international and regional, governmental and nongovernmental organizations.

With respect to target groups for environmental education, the ministerial-level Tbilisi EE Conference (held in 1977 in the IEEP framework) considered that environmental education should be incorporated into all educational processes and cater to all sections of society: (i) the general public and non-specialists; (ii) the socio-professional groups whose activities have important effects on the environment; (iii) the scientists and technicians whose fields of study, whether concerned with the natural or social sciences, deal with the environment and who must receive specialized training.

Since the inception of the International EE Programme in 1975, UNESCO's Education Sector has been responsible for its planning and execution in cooperation with UNEP. This cooperation has been established in accordance with the Memorandum of Understanding between UNESCO and UNEP (Revised in 1987) and specific biennial project documents for IEEP, which were prepared on the basis of UNESCO's C/4 and C/5 and the United Nations System-Wide Medium-Term Environment Plan (SWMTEP). The present UNESCO-UNEP Project Document, corresponding to Phase VII of IEEP, covers the period 1990-1991.

III. Actions Taken

The first phase (1975-1977) of the International Environmental Education Programme was devoted to the promotion of general awareness of the necessity for environmental education through a number of international and regional conferences and meetings and the dissemination of periodic information through an international newsletter Connect, which appears in six languages (shortly seven) and is distributed to 17,500 individuals and institutions around the world. The first phase culminated in the Tbilisi Conference (1977) and was summarized in a book, titled Environmental Education in the Light of the Tbilisi Conference (1980). The second phase (1978-1980) focused on the conceptual and methodological development of environmental education with a view to incorporating the environmental dimension into general education. In this connection, an interdisciplinary approach was stressed so that environmental education could contribute to the solution and prevention of environmental problems in their multiple aspects.

In the following phases (1981-1989), emphasis has been placed on the development of content, methods and materials for environmental education and training activities for all levels and types of education. A series of studies and research and experimental projects were undertaken and a number of publications and technical documents were produced. These include a sourcebook for environmental education (1985) and methodological guides for education and training. Both are included in the "Environmental Education Series" of IEEP publications, which was inititated in 1983 and continued since.

During the First and Second Medium-Term Plans of UNESCO (1975-1989), the main activities and output of IEEP were the following:

- 23 international and regional meetings and seminars, including the Intergovernmental Conference (Tbilisi, USSR, 1977) and the International Congress (Moscow, 1987), which produced the International Strategy for Action in Environmental Education and Training for the 1990's;

- 95 pilot and experimental projects dealing with general education, teacher training, technical and vocational education, higher education and nonformal education, including better use of ecological museums and biosphere reserves;

- 60 prototype resource materials and guides, of which 30 were published under the "Environmental Education Series";

- 21 regional and subregional training workshops and 110 national seminars and training workshops supported, resulting in the training of thousands of curricula developers, teacher educators, educational planners and teachers for all types and levels of education .

(More information on the nature, type and number of environmental education activities carried out by IEEP at the international, regional, subregional and national levels is available in an information document, entitled "Environmental Education: Selected Activities of the UNESCO-UNEP International Environmental Education Programme, 1975-1990".)

Present and Future Actions

The Third Medium-Term Plan of UNESCO (1990-1995), approved by its General Conference in 1989, has given high priority to the development of environmental education and information through the Intersectoral and Inter-Agency Cooperation Project: Environmental Education and Information.

The purpose of the activities proposed under this intersectoral and inter-agency cooperation project is to provide wider knowledge and information about environmental issues so as to develop awareness, constructive attitudes and a sense of commitment towards the protection and improvement of the environment. This is to be be done through the provision of scientific information and education and the popularization of the interdisciplinary character and problem-solving approach of environmental education and information in both formal and nonformal education.

The overall strategy of the intersectoral and inter-agency cooperation project is to take into account the achievements of past and current activities of the UNESCO-UNEP International EE Programme, as well as those of UNESCO's scientific intergovernmental programmes.

In the area of environmental education, priority has been accorded to its development as part of fundamental education, including literacy and post-literacy education, for young people and adults alike, as well as primary education and secondary general, technical, vocational and higher education. It is clear from past and present experience and from Member States' expressed needs that environmental education should be incorporated into school curricula, teaching materials, and pre-service and in-service teacher training programmes throughout the world.

As for the modality of execution, the intersectoral and inter-agency cooperation project on Environmental Education and Information will be implemented in close cooperation with UNEP, United Nations agencies and governmental and nongovernmental organizations, and within the context of the United Nations System-wide Medium-Term Environment Programme.

The first biennium of UNESCO's Third Medium-Term Plan (1990-1991) corresponds to Phase VII of IEEP. The programme reflects the priority areas which follow.

1. Teacher Education

Required activities under this action are the implementation in UNESCO's five regions of 30 pilot projects regarding incorporation of environmental education into primary and secondary teacher training programmes. In this context, pilot projects have been undertaken on the incorporation of environmental education into primary and secondary teacher education in China, Greece, Guinea, Kenya, Malta, Norway, Turkey and United Kingdom.

2. Development of Curricula and Teaching Materials

Here the required activities include two international training seminars with a view to incorporating environmental education into school curricula, preparation and dissemination of five prototype programmes for primary education and two for agriculture and industrial education. Similarly, activities are scheduled for local adaptation of teaching materials already prepared by IEEP; and preparation and dissemination of teaching materials for formal and nonformal education activities including production of audio-visual materials on specific environmental problems.

In this respect, the international training seminar on the incorporation of environmental education into primary school curricula is under preparation in collaboration with Malta National Commission for UNESCO, the Foundation for International Studies and the University of Malta. Similarly, an international training seminar on the incorporation of environmental education into secondary school curricula is under preparation in cooperation with Egyptian National Commission for UNESCO in Cairo, Egypt. Inputs to these seminars consist of prototype EE curricula for primary and secondary schools and their corresponding teacher education curricula, (under preparation by IEEP) on a subregional basis, in collaboration with educational institutions in Sri Lanka and India for South Asia; in Jamaica

for the Caribbean; in Egypt for the Arab States; in Malaysia and the Philippines for the ASEAN region; in Kenya for Africa; and in OREALC for Latin America. These prototypes are being prepared on the basis of curricula analysis, environmental problems and environmental education priorities of the respective subregions, which could consequently facilitate their adaptation by concerned educational institutions at the national level.

IEEP's "Environmental Education Series" is being expanded to include new environmental education documents, such as environmental education modules on global change, soil, fresh water resources, oceans and their resources, biological diversity, sustainable development, and educational and scientific criteria for selecting the environmental dimension for general university education.

3. Research and Experimentation: Developing Awareness among Educational Planners and Decision-Makers

Under this action pilot projects will be undertaken for research and experimentation on application of the International Strategy for the Development of Environmental Education in the 1990s (see below) at the national level. Further activities will be undertaken on the incorporation of environmental issues into general university education, environmental education for journalists, developing environmental awareness among decision-makers, and formulation of an environmental education strategy in areas where tourism is highly developed. Studies will also be undertaken to define more clearly the influence of cultural attitudes and values on environmental education. Support will be given to educational institutions for the incorporation of EE into training courses for educational planners and administrators. Technical assistance will be provided to Member States for the development of EE at the national level and to nongovernmental organizations for activities related to IEEP's environmental education and information programme.

In this context, activities have been undertaken in cooperation with National Commissions for UNESCO and appropriate educational institutions for the development of national strategies and action plans for environmental education in Brazil, Congo, Ethiopia, Finland, Guyana, Jordan and Thailand. The environmental education strategy and action plan mentioned above is prepared on the basis of the state of the environment in the respective Member States and by an interdisciplinary committee of educators, environmentalists, scientists, economists, and experts from industry, agriculture and public health.

For the training of educational decision-makers, especially educational planners, an Environmental Education Guide for Educational Planners has been developed and disseminated and one international training seminar for educational planners organized, both in 1990. A national training seminar for 150 high-level educational decision makers and educational planners

is under preparation in India to be organized in 1991 and a similar subregional training seminar for educational planners is being prepared in Zaire for the central region of Africa.

4. Environmental Education Information

Activities in this area include: the publication of the quarterly newsletter Connect in the six official languages of UNESCO (seventh in prospect - Japanese); dissemination of the International Directory of Institutions in three languages; and expansion of EE networking.

For prospective activities of IEEP for 1992-1999, the International Strategy for Action in the Field of Environmental Education and Training for the 1990s serves as the guiding document . It was prepared by the Secretariat of UNESCO in collaboration with the Secretariat of UNEP. It is the result of discussions, additions, amendments and approval of a draft document submitted for this purpose to the UNESCO-UNEP International Congress on Environmental Education and Training, held in Moscow, USSR, August 1987, and attended by over 300 specialists from 100 countries plus observers from many international organizations. Part I highlights international EE needs and priorities; Part II outlines an international strategy for action in the 1990s. This document is being currently disseminated in English, French, Spanish, Arabic, Russian and Chinese and used as a resource document in the development of national strategies and action plans in environmental education.

Presentations of Participating Organizations

United Nations Environment Programme (UNEP)

1. Environmental education: In UNEP this is mainly dealt with under the joint UNESCO-UNEP International Environmental Education Programme.

2. Environmental training

(a) Policy.

Up to a fifth of UNEP's budget is spent on education and (specially) training. UNEP's general policy is to promote SUSTAINABLE DEVELOPMENT. Its training policy and training activities are therefore designed to promote the implementation of this general policy. The aim of training is to enhance the capability of countries, particularly developing countries, to deal with their environmental concerns through environmental monitoring and management activities.

Other aspects of UNEP's environmental training policy are as follows:

- Training is expected to produce a multiplier effect in the trainees' countries. Furthermore, UNEP has established a mechanism for systematic follow-up to determine the effectiveness of the training.
- General environmental training attempts to build awareness of the environment as a whole and to develop individual capabilities to deal with environmental concerns. The targer groups include: policy-makers and decision-makers; administators and planners; engineers, architects; industrialists; employers and trade unioninsts; journalists, agriculturists, etc.
- Specialized training is primarily for those occupational or social groups whose activity and influence have an important bearing on the environment, e.g., biologists, ecologists, economists, hydrologists, toxicologists, soil scientists, agronomists, foresters, oceanographers, landscape architects, limnologists, meteorologists, sanitary engineers, et al.

(b) Criteria for initiating training

- Identified needs; high potential for the target group's contribution to the improvement of environmental decision-making; relevance to UNEP's priority areas for training; documented existence of necessary professional competence; agreement with counterpart organization on modalities of training; availability of suitable training facilities; and availability of appropriate follow-up mechanisms.

(c) Methodologies and duration

Different methodologies are employed which include workshops, seminars, short courses, on-the-job training, post-graduate courses, roving workshops, practical site

demonstrations, attachment programmes, etc. Depending on the identified needs, availability of funds, subject matter, level of prospective trainees, etc., three types of training are recognised in relation to time:

(i) short-term (3 days to 1 week) aimed mainly at sensitising trainees to environmental issues and enabling them to relate more adequately to each other on an inter-disciplinary basis; (ii) mid-term (2 weeks - 2 months) aim at giving the trainee an in-depth treatment of (usually one) selected environmental problem and of solutions thereof; (iii) long-term, usually post-graduate training (4-10 months) aimed at in-depth training of key cadres from developing countries to work as environmental scientists, planners and managers.

3. Selected examples of environmental training programmes of UNEP

(i) Long-term: Since 1977, UNEP and Unesco have sponsored a ten-months postgraduate course in Environmental Management at Dresden's University of Technology. A four-month intensive international training course for postgraduate participants has been set up at Tufts University, USA, for 1990 and 1991. These courses offer a cross-sectoral approach to the management of resources and offer as areas of specialisation the areas of concentration listed under section 4.

(ii) Mid-term: UNEP, UNIDO, Government of USSR and Tampere University of Technology (Finland) jointly organised a 5-weeks training course on Environmental Management for Industrial Managers and engineers from developing countries, with accent on Clean Technologies.

(iii) Short-term: 5-day environmental awareness building workshops for personnel of Ministries of Environment, Education, Planning, Agriculture and Industry of African States were organised in 1987, '88 and '89. The main aim was to discuss the achievement of sustainable development through intersectoral action; workshop on methods and procedures to integrate Environmental considerations into developmental planning and administration; training course on desertification assessment mapping and monitoring; regional workshop on hazardous wastes management policies and strategies in Africa; training course for Infoterra focal points; regional workshop on ozone; and orientation workshop on geographic information systems in Accra, Ghana.

4. Areas of concentration

The Governing Council of UNEP at its fifteenth session (May 1989) decided that UNEP should focus its efforts (including training efforts) on these "areas of concentration":

(a) Protection of atmosphere by combating climate change and global warming, depletion of the ozone layer, and transboundary air pollution.

(b) Protection of the quality of fresh-water resources.

(c) Protection of ocean and coastal areas and resources.

(d) Protection of land resources by combating deforestation and desertification.

(e) Conservation of biological diversity.

(f) Environmentally sound management of hazardous wastes and toxic chemicals.

(g) Environmentally sound management of biotechnology.

(h) Protection of human health conditions and quality of life, especially the living and working environment of poor people, from degradation of the environment.

5. Information

UNEP through its Information and Public Affairs branch, implements a comprehensive information and public relations programme in support of UNEP's programme and regional priorities. This involves providing communication support and information to the general public and the media as well as providing specific outreach programmes to defined sectors such as youth, women, parliamentarians, industry, religious groups. Support is also given to general programmes such as goodwill ambassadors national committees, national committees and environmental awards.

(a) Publications: UNEP has programmed some 59 public information publications and a number of professional/reference publications by 31 December 1991, including the State of the World Environment reports for 1990 nad 1991. In 1992 UNEP will produce a comprehensive stock-taking on The World environment twenty years after the Stockholm Conference. The frequency of "Our Planet", UNEP's new magazine will be increased to six issues per year in English, French and Spanish in 1991.

UNEP is publishing other publications and information kits in partnership with NGOs. For example: the training and reference manual for the 16 million-strong scouting fraternity worldwide, and the guidelines on protection of freshwater resources for Girl Guides and Girl Scouts; the instruction manual on freshwater, land and forest protection for the International Federation of the Red Cross and Red Crescent Societies Youth Programmes.

In 1991 UNEP and the Environment Liaison Centre International (ELCI) will collaborate on production of citizen's guides to sustainable agriculture, development of an East African node for electronic networking and conferencing among African NGOs and publication of Ecoforum, development of a booklet on information mangagement for small NGOs and provision of small grants to NGOs for local initiatives. An NGO conference is also planned in connection with the UNEP Governing Council meeting in 1991.

(b) Media services: Press conferences/briefings and media workshops and the dissemination of news releases, features, fact

sheets and backgrounders in collaboration with media (regional and international) networks will be ongoing in 1991-92. The networks include: Inter Press Service, Press Foundation of Asia, Union of African Journalists and the World Press Centre.

An international network of select journalists working with influential papers/television will be expanded and steps will be taken to speed up communication to it.

UNEP/IPA is gaining access to electronic networking to enable its participation in conferencing and ensure wider, faster and more efficient dissemination of information to media, NGOs and other organizations and agencies.

(c) Audio-visual services: Videos, films, radio programmes (and planned activities including the global photo-contest and touring photo exhibit) aim at increasing public understanding of and support for actions taken by UNEP to deal with the priority environmental issues.

UNEP works with TVE (Television Trust for the Environment), an organization that UNEP set up in 1984 and co-sponsors, on Developing Stories, six one-hour films to be made by outstanding directors from Asia, Africa, and Latin America to be broadcast in our 10 countries at the time of the UN Conference on Environment and Development UNCED in 1992.

(d) An external relations policy and programme is nearing completion. A coordinating office for outreach activities is currently being established. The programme includes goodwill ambassadors and relations with a wide range of NGOs representing:

i. Youth: The UNEP Regional Youth Focal Points roundtable meeting (December 1990) agreed on a common strategy for an effective youth contribution to UNCED including regional youth fora in 1991 (including the UNEP Youth Forum in New York) and a global forum in 1992. These fora present opportunities to explore measures that can be used by youth to promote environmental awareness and education (for the public in general and youth in particular). UNEP's annual youth forum in North America (1990) drew some 4,000 students from 13 countries to New York.

A new programme called Earth Defenders to be launched in 1991-92 to encourage the young to do something for the environment. UNEP is planning to launch a "clearing house" for them under a "Green Brigade" programmme.

ii. Women: UNEP's outreach programme on women includes regional assemblies in Asia and the Pacific, and Latin America and the Caribbean (1990), and a global assembly (1991). The assemblies wil recommend local , national and regional actions needed on priority environment and development issues.

iii. The Outreach Network (New York University/New York Zoological Society/TVE/UNEP/WWF project) disseminates information packs on environment, development and health to more than 300 individuals, government organizations, NGOs, aid and development agencies involved in public awareness campaigns mostly in developing countries. Contributors of information to the Network

include most of the UN agencies and some leading public and private environmental agencies.

iv. Efforts will be made to expand collaboration with additional constituencies, such as religious/spiritual communities, service clubs, and arts/entertainment groups.

World environment Day (WED): Widespread public concern for the environment has ensured a higher profile for WED and wider commemoration of the occasion. UNEP and IUCN will, in 1991, jointly launch the World Consernvation Strategy for the 1990s, now called, Caring for the Future: Strategy and Sustainability.

World Environment day, 1991 has the theme: Climate Change:- A need for global partnership. A major campaign will be launched which will run a full year to 5 June 1992, including a global photo-competition and photo exhibit, special events including promotion with select NGO networks, etc.

The Global 500 Awards for Environmental Achievement and the Sasakawa Prize have generated much publicity at local and national levels, contributing immensely to increased public awareness of environment and development. A Global 500 quarterly newsletter was launched in 1990. About a quarter of the awards go to NGOs.

Food and Agricultural Organization (FAO)

FAO recognizes that pursuing agricultural development on a sustainable basis requires maximum efficiency in the use of resources and in the development, transfer and sound application of knowledge and technologies, particularly those involving the optimal use of renewable resources, biological processes, biotechnologies, etc. Achieving these aims requires knowledgeable and skillful participation of the farm people themselves, the technicians, the scientists, the policy makers, development leaders and enlightened public opinion makers. Here lies the critical importance for FAO of environmental education, training and information, which could mobilize large numbers of people and influence their thinking, attitudes and behaviour in relation to environmentally-sound, sustainable development efforts.

As a technical organization of the United Nations, the contribution and importance of FAO's participation in environmental education and training may be seen under two interrelated components : (a) a great wealth of technical content/messages for environmental education and training initiatives in the fields of agriculture, forestry, fisheries and rural development, and (b) the teaching-learning programmes and activities of FAO in these fields. Annually, about thirteen percent of FAO executed field projects (from data gathered between 1981 and 1987) had educational or training components. Approximately fifty-six percent had a significant element of environmental concerns.

Suitable and useful for a wide range of environmental education, training and information efforts in FAO's fields of interest and competence are the organization's teaching/learning

materials on : climate change and its impact upon plant and animal life and productivity, natural resources conservation and management (soil and land, water, forest, fish stocks and aquatic and marine resources, genetic and biological resources, etc.), systems of cropping and animal raising, integrated pest/disease control and management for crops and animals, forest conservation and management, agroforestry, desertification, biodiversity and biotechnology, product utilization and recycling, etc. This knowledge base, together with FAO's pool of experts are not only used for environmental education and training but are also shared and made available to member countries and relevant UN and other agencies through FAO's advisory service and information system.

Actually, FAO's information system consists of a number of interrelated information systems, such as : FAO Geographic Information System, the International Information System for Agricultural Sciences and Technology, the Current Agricultural Research Information System, Global Information and Early Warning System (monitoring food cultivation), a World Agricultural Information Center, etc. Data of these information systems are in computerized data bases, which make them readily available for educational, training and advisory purposes.

As for future activities, FAO's newly revamped Inter-Departmental Working Group on Environmental and Sustainable Developmment has designated thirteen priority aspects, two of which are : environmental education and training, and environmental scientific and technical information.

International Labour Office (ILO)

As a tripartite organisation, the ILO is in a unique position of bringing together the social partners, that is governments, employers and trade unions, in implementing environmental policies and programmes. The ILO has a role in sensitising them to environmental considerations in their work and to their responsabilites in this area and in helping them put into effect policies to improve the environment in particular as they have a bearing on workers and their employment and working conditions.

The ILO is at present conducting several technical co-operation projects offering environmental training for employers organizations and trade unions respectively. These are inter-regional projects covering countries in all the major developing regions. Another project, a comparative research study, evaluates a number of (mostly industrialised) coutries' environmental education and training programmes and provisions.

The Office has set as one of its environmental priorities the strengthening of employers and workers organisations so that they can deal more effectively with these issues. In this connection the ILO's Bureau for Employers' Activites launched in 1984 a series of information and training activities for employers in Africa, Latin America and Asia. Funded by UNEP, these regional and national activities (eg. seminars, meetings, training courses) were designed to inform employers on the principles and practices of environmentally sound development. A

variety of teaching materials including modules, have been produced as part of these activites. This project has proved very successful.

The ILO is at present negotiating another project, building upon the ILO/UNEP project. It will focus on establishing institutions among employers' organizations in order to help them play an active environmental role on a permanent basis. Three activities constitute the essence of the project: (1) environmental management training; (2) legal advice ; and (3) advisory services on the technical and economic aspects of introducing environmentally sound technology.

A programme similar to the one for employers is about to be launched by the ILO for workers organizations throughout the world, in close collaboration with UNEP and Unesco. The aim is to reinforce the on-going activities of the ILO's Workers' Education Programme and to integrate environmental considerations within many of its traditional training programmes. Specifically, the project endeavours to increase the awareness of workers about general environmental issues and the impact their work and their enterprise have on the environment. The project aims to improve the capacity of trade unionists and workers' educators to participate actively in decision-making and implementation of measures aimed at environmentally-sound, socio-economic development at local, national and regional levels.

The ILO's Training Department has just initiated a research project that investigates a number of countries' policies and programmes for environmental education and training. The focus of the study is on vocational education and training including enterprise-based training. The study's objective is to identify the mechanisms and means by which the findings and knowledge about environmental problems, issues and solutions are being transferred into school and training curricula and programmes. As far as possible the project also aims to assess the effectiveness of the training programmes as to their effect on environmental behavior of individuals, firms and institutions.

The study will be based on some 7 country case studies. In addition there will be detailed studies of interesting and innovative approaches to environmental training. The project should provide useful insights into how environmental training is best integrated into vocational training programmes. It will also provide inputs into the work the ILO is undertaking to formulate its environmental training strategy.

United Nations Industrial Development Organization (UNIDO)

UNIDO deems that it has an important and unique role to play in environmental education, training and information; that developing countries must enjoy access to new information of knowledge, especially environmental, since development and the environment are part of an inseparable whole which is environmentally-sound, sustainable development.

A comprehensive Environment Programme has been elaborated for the organization whose accent falls on : (1) incorporating environmental considerations into the activities of UNIDO; (2) enhancing the awareness of developing countries of the need to include environmental considerations in their industrial plans and policies; and (3) assisting developing countries to prevent and cure the effects of environmental degradation attributable to industry.

UNIDO contributes to increased environmental awareness through advising governments, implementing technical assistance projects, putting together investment promotion schemes, developing industrial human resources through a variety of training programmes, and in a myriad other ways attending to the needs of developing countries in their industrialization. UNIDO also issues a variety of publications and conducts various environmental training and information activities, while taking steps to ensure that its own technical co-operation projects take due account of the environment. In addition, the recent creation of an in-house Environmental Co-ordination Unit to oversee implementation of the Environment Programme signals greater weight to the precepts of environmentally-sound and sustainable industrial development.

Knowledge is viewed as the key. Clean technologies, energy and materials use, conservation and awareness-raising call for a new attitude towards industrial activities. Here UNIDO is involved in two major interrelated ways: through projects, training, feasibility studies, investment analyses ; and the development and dissemination of information, much of it computer-based and environmental.

UNIDO's Industrial Human Resources Programme represents 15 percent of UNIDO's total technical assistance delivery. It focuses on developing policies, strategies and methodologies to assist the developing countries in putting together effective training systems to meet the labour skill requirements necessary to ensure that environmental aspects are fully integrated in all industrial projects. It also provides extensive group training programmes. In 1989 alone, 87 programmes conducted in 42 countries succeeded in training 1,500 people; and environment-related training is an integral part of this work. In all of its some one hundred pre-investment studies yearly UNIDO appraises the impact of individual, macro-level projects on long-term national sustained development. In numerous other projects, technical training is designed to facilitate the effective transfer of environmentally-sound technology.

UNIDO's Environment Programme places explicit emphasis on training developing countries' officials and managers in dealing with environmental aspects of their industrial development. It is to be augmented by projects dealing in greater depth with some of the following areas: training developing country managers to conduct environmental audits of industrial facilities; enabling planners to apply principles of environmental assessment in evaluating national and local plans; training employees of industrial facilities in various aspects of risk assessment and risk management in the interest of better operation and safety.

Some of these projects are underway already but their emphasis is shifting to greater consideration of environmental aspects and concerns.

World Health Organization (WHO)

WHO's mandate for its Global Programme for the Promotion of environmental Health includes education, training and information. A primary focus for the organization has been the provision of evaluated information on the health effects of different environmental hazards and technologies, ranging from traditional hazards in rural areas of the least developed countries to modern hazards of chemical manufacturing or nuclear power plants. Several hundred publicatons are available on these topics (see WHO catalogue).

Three series of particular interest published by the International Programme on Chemical Safety, and which can be obtained as part of a WHO Environmental Health "package", are the Environmental Health Criteria (aimed at specialists), the IPCS Health and Safety Guides (aimed at any information-seeker) and the International Chemical Safety Cards (aimed at factory managers and workers who may come into direct contact with hazardous substances). Information is also provided through "Guidelines" for health protection against hazards in air, water, food and the workplace, and on methodologies for environmental health risk assessment and health risk management.

Environmental education and training activities at WHO have traditionally been aimed at key professionals at national level, encouraging them to use priciples, methods and materials promoted by the Organization. Many activities focus on rather specific aspects of environmental health, teaching the target group how to carry out a clearly defined task. Collaboration with bilateral technical cooperation agencies and nongovernmental organizations is being strengthened in order to expand the use of training materials and approaches developed by WHO.

Focused training carried out both by the subprogrammes of the WHO Environmental Health Programme and on a broader scale, encompassing all environmental aspects. The subprogrammes cover community Water Supply and Sanitation, Rural and Urban Development and Housing, Control of Environmental Health Hazards, and Promotion of Chemical Safety. Their activities include: training in specific hazards or control technologies (e.g., drinking-water quality-monitoring procedures) and training workshhops in support of specific projects(e.g., air-pollution monitoring for the Global Environment Monitoring system -- GEMS); and they are accompanied by training-module development (each one-week long).

Other initiatives focus on training in management skills. It was found that the failure of certain country activities was due less to lack of technical knowledge than lack of management and communication skills. The "dual-focus" training programme was therefore developed, which analyses both individual and organizational needs and relies heavily on problem-solving techniques for training. Another approach has been the training

of local trainers in the production of very basic items called "job-aids" such as how to maintain a water pump.

Additionally the architecture curriculum in basic university courses has been updated to include environmental health content.

WHO has recently initiated two new projects: (1) the Global Networks to strengthen Education, Training and Research in Environmental Health for professional groups concerned (epidemiologists, urbanists, et al), each group with its own global network national training workshops and materials; and (2) the Healthy Cities Project, which is based on the responsibility of "primary" cities for national networks of "secondary" cities, concerning urban improvement in shelter, public health, wastes disposal, etc. WHO has no programme or package to give to the cities, but acts as enabler, facilitator, mediator and advocate of change.

WHO plans to broaden its role in the achievement of sustainable, environmentally-sound development with education, together with appropriate technology, as the key.

World Meteorological Organization (WMO)

The WMO is the specialized UN agency with the responsibility for international cooperation and coordination in meteorology and operational hydrology. Whatever the overall definition of the human environment, the atmosphere must be considered as an essential element, and the atmosphere is by definition WMO's business. One of the major WMO objectives for the period 1988-1997 is precisely to contribute to the wise use and protection of the environment.

World Weather Watch is the basic programme of WMO that provides most of the fundamental meteorological and climatological data. The global surface and satellite-based systems make simultaneous observations of surface and atmospheric conditions throughout the world and transmit these in real time through an international telecommunications network to regional and world centres for the collection and analysis of data.

A new system, Global Atmosphere Watch, integrates many monitoring and research activities concerned with the measurement of change in atmospheric composition, and will serve as an early warning system to detect further changes in atmospheric concentrations of the greenhouse gases, changes in the ozone layer and in the long range transport of pollutants.

Since 1979, following the First World Climate Conference, WMO established its World Climate Programme. More recently (1988), in response to increasing worldwide concern about the "greenhouse" effect and depletion of the ozone layer, WMO and UNEP set up the Intergovernmental Panel on Climate Change with three working groups to assess scientific aspects and socio-economic and ecosystem impacts, and to develop national and international response strategies.

These environment-related activities and programmes of WMO involve many educational activities, such as the organization of courses, seminars or workshops which are coordinated through the WMO's Education and Training Programme. This programme also assists WMO Members to meet their need in trained personnel by providing fellowships, producing training publications, acting as an exchange forum for audio-visual materials and providing support to a network of seventeen regional meteorological training centres.

Although the produced educational material is mainly addressed to specialists and technical or professional staff, part of it, in particular brochures, could be of use for secondary-level students and for the general public. There are also guidelines for curricula at all levels, including university and specialized training. WMO is willing to share this material with interested agencies and eventually to coordinate those training activities which could be of interest for the Unesco-UNEP International Environment Education Programme.

A small project under the WMO Education and Training Programme which is aimed at preparing the users of meteorological and hydrological information and services to make the best and most effective use of them also extends its aims to the weather education of the general public. Through this project and other resources, WMO would be most anxious to cooperate with other agencies in environmental education and training activities, in particular those that are directly involved with training persons who will in turn be trainers in environmental education and training.

World Bank

The World Bank's role in environmental education has been largely indirect and in relationship to the increasingly accepted goal of sustainable, meaning environmentally sound, development (in which the World Bank's role is of major importance). Several years ago, consequently, the Bank created a central Environment Department and four regional Environmental Divisions to oversee and promote environmental activities in the organization's work.

A document entitled Environment, Growth and Development (see Connect, June 1990, "EE News and Publications") describes the general views of the Bank in this regard, particularly that of giving special attention to the design of economic incentives to induce environmentally sound behavior through policies which satisfy both economic and environmental objectives. In this connection the Bank has enhanced its dissemination of environmentally-linked development information and its own participation in the growing number of forums on environmental issues.

The Bank's Environment Division for Africa (to take it as an example) has tasks in three main areas: (1) environmental assessments, which are related to specific projects; (2) regional studies; and (3) work with National Environmental Action Plans, which is most important in the context of environmental education. There is also an Education Division for Africa which

is involved in curriculum development (though its EE input has been admittedly limited to date).

The Bank's National Environmental Action Plans are initiatives ideally aimed at covering all the most important environmental issues within a given country, as well as legal and institutional questions. In many of the countries, EE has been recognized as a key issue, particularly in relation to long-term sustainable development, but in many cases as well neither the involved country not the Bank has (yet) the relevant expertise for effective planning and follow up in this field (but hope to).

Also to be mentioned are activities of the Bank's Economic Development Institute, which arranges training courses and seminars for officials of developing countries with environmental concerns steadily mounting in importance in the courses and seminars. Specifically (and perhaps prophetically) the Development Institute has initiated collaboration with Swedish Development Aid in order to assist in creating an EE network among selected African universities.

Lastly, the Bank's Publications Department has established a Development Education Programme, which has been preparing and marketing classroom materials (a catalogue is available). Thus far environmental concerns have been only marginally discussed in this programme, but a set of curricular materials focusing specifically on environmental issues is planned for 1992.

United Nations Development Programme (UNDP)

Increasingly during the past two years UNDP has become involved in environment, education and human development. Environmental education in particular, is viewed as an integral component of what is called " the greening of development" and the assurance of its sustainability. Environmental considerations are an inseparable part of all of UNDP's activities with over $500 million currently being targeted worldwide on specific environmental aspects of development. Since the 1970s, UNDP has contributed over $32 million directly towards EE through forty-five projects, nineteen of which are still being implemented.

In order to help developing countries strengthen their national capacities to evaluate options and formulate sustainable development strategies, UNDP has been instrumental in creating a Sustainable Development Network. Through the network, organizations involved in national EE activities in all sectors will be identified. If the predicted demand for environmental education cannot be met by the supply catalogued in the network, UNDP, in cooperation with other UN agencies, could then provide technical assistance to train educators and foster additional programmes. The country networks could be linked through UNDP auspices with international information networks that can provide quick and timely material on environmental questions.

UNDP Environmental Management Guidelines have recently been drafted and are currently being developed at the organization's field-office level. When the guidelines are finalized, a systemwide training programme will commence which will seek to create general environmental managers of all UNDP staff able to incorporate their awareness into the development process with which they are daily involved.

Environmental awareness and action have been promoted at the field level through a series of some seventy Workshops on Environment and Sustainable Development since July 1989. While most of the workshops have been of a general nature intended to create an awareness of environmental matters in each country and to help governments begin to define environmental priorities, others have been directly related to specific topics, including environmental education. To cite two examples: a Seminar-Workshop on the Development of an Environmental Education Strategy for Sustainable Development was held in the Philippines and a Seminar on the Roles of Mass Communications, Government and NGOs in Mangroves Conservation occurred in Thailand. Additional workshops are scheduled between now and the end of UNDP's 4th cycle.

UNDP is also financing the publication of EE materials. At the elementary or seconday school level, a comic-book style 90-page booklet, "Man and His World," has been published by the UNDP/Unesco Regional Project for Cultural Heritage and Development, in collaboration with UNEP and the Man and the Biosphere Programme. On a higher academic level, UNDP co-financed and contributed together with UNEP to World Resources 1990-91: a Guide to the Global Environment which was issued by the World Resources Institute in June 1990. The in-depth publication presents worldwide natural and human resources data useful for developed and developing countries. An environmental video, "Borrowed from Our Future," has been prepared by UNDP as an educational contribution for in-house use, as well as for governments and the public at large. Copies of the video are being distributed in English, French and Spanish.

An additional new project is the $7 million United Nations Sudano-Sahelian Office (UNSO) regional effort for environmental education covering over 900 secondary schools in the Sahel countries.

During its 5th cycle, which begins in 1992, UNDP intends to increase its activities in environmental eduction. Projects with be programmed through IPF and SPR resources to not only follow-up on the initiatives taken at the World Conference on Education for All, held in Jomtien, Thailand, March 1990, but more iportantly, to continue meeting the requirements of developing countries as they proceed to incorporate the environment into their own needs and concerns.

Commission of the European Communities (CEC)

The resolution of the Council and the Ministers of Education meeting with the Council concerning environmental education, 24 May 1988, covers the philosophy, programme and plans of the CEC in this area. The resolution states the objective and guiding

principles of EE and indicates the measures to be taken to achieve the objective and implement the principles both at the level of Member States and the European Community level.

Action to be taken at the Member State level includes introduction (where necessary) of EE into all sectors of education, including vocational training and adult education, with the Member State appropriately setting out its EE policy in a document made available to schools and other educational institutions. "The document should take account of the fact that EE is an interdisciplinary subject of relevance to many fields of teaching." Extracurricular school activities are to be encouraged, pre- and in-service EE training of teachers to be undertaken, appropriate materials to be developed and pilot and research projects to be considered. "Specialists who are particularly concerned with environmental problems should, through appropriate vocational training facilities, have the opportunity to acquire new knowledge or bring their knowledge in this field up to date. Relevant environmental content should also be introduced into initial vocational training and university training, with a view to influencing those with future professional responsibilities in a direction which is most favourable to the conservation of the environment and natural resources."

Action to be taken at the European community level will be reinforced by a working party appointed by the Commission to take these initiatives: (1) exchange of information through an inventory of EE efforts already taken and organization of EE meetings, seminars and symposia; (2) improvement of EE documentation for teachers and pupils through basic documentation on Community environmental issues, organization of summer courses for environmental teaching of specialists and production of a European guide on EE for higher education;(3) incorporation of EE into current activities, especially for youth, and encouragement of EE cooperation among institutes of higher education, particularly by use of the Erasmus and Comett programmes.

International Council of Scientific Unions (ICSU)

The environmental education, training and information activities of ICSU at the international level are primarily -- but not solely -- conducted under the aegis of, firstly ,its Committee on Teaching Science and, secondly, one of its major bodies, the International Union of Biological Sciences (IUBS). Its membership, consisting of scientific unions, national academies of science, national research councils, and the like, indicates the scope of these activities at the national level.

The forms taken are periodicals and other publications, seminars, workshops and conferences. An example of the last is the joint ICSU-Unesco International Conference on "Science and Technology Education and future Human Needs", held in Bangalore, India, August 1985. The foci of the conference were: environmental education; health, food and agriculture; energyresources; the use of land and mineral resources; industry and technology; information technology and transfer; ethics and social responsibility. The proceedings of the conference were

(typically) published by ICSU Press and Cambridge University Press as a series of books. The conference follow up included the organization of training courses and the development of teacher guides.

ICSU's Committee on Teaching Science is also developing, in cooperation with the International Geosphere-Biosphere Programme, a series of educational activities on how to confront the looming problem of "Global Change", particularly climatic, in the educational system and process. These activities are aimed at sixteen- to nineteen-year-old students. The Committee is specially engaged in the scientific aspects of "Global Change" and is seeking active help from scientists of the IGB Programme. The first workshop was held at the University of California, Berkeley, June 1990. It produced four educational units on: the global carbon cycle, the changing atmosphere, remote sensing, and clues from the past -- glimpses of the future.

With regard to the International Union of Biological Sciences, its Commission on Biological Education is undertaking a series of activities on environmental education and sustainable development. The Commission's symposium on "Biological Education and the Environmental Education Programme of the IUBS", held in Ottawa, Canada, in 1982, was a forerunner. It was followed by a symposium on "Tropical Biology and Environmental Education," Budapest, 1985; a workshop on the same themes held in Bangkok, Thailand, 1987 (which developed a teacher's guide; a meeting on "Biological Education and Future Human Needs," Moscow, USSR, 1989; and a meeting co-sponsored by Unesco and UNEP on "Biological Education and Sustainable Development," UNEP Headquarters, Nairobi, Kenya, September 1990.

Current projects of IUBS's Commission include preparation of: a teacher's manual, titled "Order and Diversity in the Living World; Curricular Recommendations for School Science; a volume on "Biological Education and Sustainable Development" and another on "Teaching Biology in Universities," which will cover these major topics: the environment (pollution, conservation of biological diversity, sustainable agriculture, environmental health, climate change, etc.) as well as genetic technologies, human reproductive biology, human bio-engineering and bio-ethics.

A programme on "Biological Diversity" is presently being implemented jointly with ICSU's Science Committee on Problems of the Environment (SCOPE) and the Unesco MAB Programme. Major study areas (in which EE materials will be produced) are: (1) the ecosystem function of biological diversity; (2) monitoring biological diversity in space and time; (3) conservation of genetic resources of wild species; and (4) understanding "biological complexity." In the meantime IUBS's Decade of the Tropics Programme and Bio-Indicators Programme, both launched in 1982, continue. The latter involves the study of plants, animals and micro-organisms as indicators of the state of the environment; the programme bas brought together a large number of scientists concerned with the result that a formal operating network has been established.

International Union for the Conservation of Nature and Natural Resources (IUCN)

The first commission established by IUCN was its Commission on Education more than forty years ago; it has since added "and Communication". There are regional sub-Commissions on Education and Communication as well as regional EE information networks established by IUCN in the US, Asia, Europe and recently in East Africa.

Much of the organization's educational activities are of a grass-roots kind. For example, a low-cost, but high-impact project in India employs environmental educators on bicycles, equipped with sets of large color photographs (electricity is not always available in villages for a slide projector), depicting aspects of the environment, sources of its degradation and practical ways to protect it and ensure sustainable development. The IUCN Commission has also initiated "Tree of Learning" awards for innovative environmental educators aroung the world, developed projects concerned with environmental problems, such as scarce or polluted water supply, recycling and waste disposal, etc. Its "Environmental Schools on the Air" has proved successful in Asia and South America. Other press, radio and TV programmes on the environment have been developed and disseminated.

Among the objectives of the organization's Commission on Education and Communication for the triennium 1991-1993 are:

(1) to provide a system for the exchange and collation of information on methods and techniques for raising awareness, providing skills and creating undrstanding of the biosphere and of the imperative for its conservation;

(2) to provide institutional support and an intellectual focus for a worldwide network of communicators and educators, and to coordinate regional activities;

(3) to develop principles,policies and procedures for programmes of communication in support of the environment; and

(4) to contribute to the dissemination of EE information through appropriate publications and other media.

IUCN is currently working in partnership with UNEP and the World Wide Fund for Nature (WWF) in preparing a new statement on "World Conservation Strategy for the 1990s," in which environmental education, training and information will have a prominent place.

Annex I

AGENDA

1. Opening session

2. Presentation and discussion of environmental education and information programmes of participating agencies and organizations.

3. UN cooperation and coordination in environmental education and training.

4. Suggestions concerning environmental education inputs to the United Nations Conference on Environment and Development (Brazil, 1992).

5. Closing session.

Annex II

Welcoming Address

from Colin N. Power
Assistant Director-General
Education Sector
Unesco

Ladies and Gentlemen,

Our century, now ending, had scarcely begun when H.G. Wells was already warning that "the race is between education and catastrophe." Presumably he was thinking of a devastating world war even before nuclear weapons had been invented. We at Unesco still think world peace is indeed a priority (and I shall return to it), but another global threat is bringing us together this week: the endangered world environment.

Need I cite the problems -- global warming, the degradation of the water we drink, the earth that nourishes us? They are of the highest political, economic and social order; and they deeply affect the fabric, quality, the very liveability, of daily life.

By no coincidence we are on the eve of the twentieth anniversary of a major event for those of us concerned. I speak, of course, of the United Nations Conference on the Human Environment, held in Stockholm, June 1972.

In many ways our meeting today, tomorrow and Thursday is a preparation for the twentieth anniversary commemoration of that event, namely, the World Conference on Environment and Development, to be convened in Brazil in 1992. We know it will be more than a celebration of the Stockholm Conference. It will be a report on what we have done for the world's environment these past two decades, what we have failed to do, and, most important of all, what we plan to do before the end of the century.

It is no longer enough to proclaim the gravity of environmental problems and declare that "something" must be done about them. It is well past time for environmental solutions. We know sufficiently what the solutions are; we possess the know-how to cope with the problems.

What is urgently needed are environmentally knowledgeable and responsive decision makers. Our future planning must include them as one of our highest priorities.

But as compelling is a thoroughly informed public opinion supporting a political will -- nationally and internationally -- to apply the solutions, whether as prevention or mitigation of natural disasters and global environmental threats.

Here, I am convinced, environmental education at all levels for all people is crucial. The more knowledge the public has about the environment and the threats to it, the better, the more rapid and the more effective decision makers can be -- and will be.

Is this not at the heart of the recommendation of the Stockholm Conference which has brought us together today? "The organizations of the United Nations system," it states, "especially Unesco, and other international agencies concerned, should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education, interdisciplinary in approach, in-school and out-of-school, encompassing all levels of education and directed towards the general public, in particular the ordinary citizen ... with a view to educating him (and her) as to the simple steps (they) might take, within (their) means, to manage and control their environment."

In response to Recommendation 96 and in fulfillment of its UN manadate and coordinating role in education, Unesco held consultation meetings with the agencies and organizations concerned. Then, in 1975, Unesco and the United Nations Environment Programme (UNEP) launched the Inernational Environmental Education programme, which is our Organization's very much ongoing, joint (Unesco-UNEP) programme in the vital field of education on, in and for the environment. In fact, this consultation meeting is in the framework of that joint programme, which is certainly one of the most succcessful interagency activities in the United Nations system.

The importance our own Organization places upon environmental education is indicated in the three priority themes around which our Third Medium-Term Plan (1990-1995) has been oriented: peace, development and protection of the environment. these, we believe, are the world's major preoccupations.

Actually, development and protection of the environment can be -- indeed, must be -- combined if development is to be sustainable, if the earth's resources are not to be exhausted in one or two generations. Viewed thus, environmental education becomes doubly important, for its goal is harmonious, environmentally sound development -- a greener earth, no less than the new "earth patriotism" which the United Nations Secretary-General, Javier Perez de Cuellar, has been invoking. For a world at peace with itself is viable only if it is at peace with nature. This too means environmental education and an environmental ethic which is its keystone. Our ambition should be to make that an intergovernmental ethic.

To achieve these aims, to respond to the world's concern about the alarming state of the world's environment, Unesco has established three major objectives:

Firstly, to augment and expand environmental educaiton, information and public-awareness programmes for teachers, technicians, professionals and decision makers with the view to achieving global, environmentally sound development;

Secondly, to actively help provide scientific knowledge and trained personnel, while focusing on selected activities to be undertaken and completed over a limited period of time and dealing practically and directly with the earth -- its biosphere, freshwater supply, oceans and seas, and their interactions; and

Thirdly, to aid Member States, particularly the least developed among them scientifically and technologically, to strengthen their scientific and educational capabilities and thus their capacity to effectively address environmental issues and problems relating to the startling increase in urban crowding, wastes to be disposed of, pollution to be contended with and natural resources to be rationally managed.

Ladies and Gentlemen,

If we could get across one concept world-wide, we would achieve our greatest common goal. The concept is Saint-Exupery's: the earth is not ours; we are not leaving it as a legacy to our children, we have been only borrowing it from them. The goal is to leave the earth at least as good as we borrowed it, and, to the best of our ability, better.

To reach this truly noble goal Unesco's strategy -- I now speak concretely -- is based on long-term, continuous, phase-by-phase development of realistic national, regional and global projects which are of a solid, cooperative, interdisciplinary character. They include information, education and training actions, conducted in conjunction with research. The main mechanisms, as we conceive them at Unesco, for implementing and coordinating these actions are existing with special international and intergovernmental programmes and associated national committees in Member States.

These actions, in turn, will involve -- must involve to succeed -- intensive cooperation with other agencies and programmes of the United Nations system, as well as with the very relevant nongovernmental and intergovernmental organizations and programmes. Here, I firmly believe, the Unesco-UNEP International Programme for Environmental Education is exemplary and pioneering.

New partnerships and joint ventures will be sought for the purpose of adopting a multipronged approach to environmental education, training and information aimed at the solution of environmental problems and the achievement of environmentally sound development. Internally, an innovative aspect of Unesco's strategy will be an emphasis on pooling the results of each of our Organization's intergovernmental scientific programmes so as to gain a clearer understanding of global environmental changes and their implications for environmental education and national development. This will entail assessments, collection of data and

dissemination of information; and, externally, cooperation with such international programmes as the International Geosphere-Biosphere Programme and the Human Dimensions of Global Change Programme. Our Organization will also vigorously collaborate in implementation of the World Climate Programme and most assuredly in preparation of the 1992 World Conference on Environment and Development, as indeed we are doing today.

Unesco's most recent joint venture with other UN agencies, together with the World Bank, resulted in the challenging -- inspiring -- conclusion that "environmental literacy for all" was a crucial part of the ultimate goal -- universal literacy, "education for all". Such was the heartening consensus of a roundtable at the World Conference for that purpose, organized cooperatively and held last March in Jomtien, Thailand.

More than ever, Unesco's aim is to achieve that great goal with an emphasis on environmental literacy for all, from the general public to government officials, each with the knowledge demanded by their particular role in the unending response to an endless threatened environment. This means, among much else, making the research results of all our scientific programmes more widely available through environmental education, information and training. The latest findings must reach our target groups, notably policy and decision makers, for the problems we face are urgent and pressing.

Together, our efforts in this direction will contribute most, I believe, to the worldwide governmental action called for in the preservation and enhancement of the world's environment and in its sound, harmonious development.

Annex III

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